

What is claimed is:

- 1 1. A method of camouflaging a surface of a structure against a background containing,  
2 simultaneously or at different times, a first color and a second color, the method  
3 comprising the steps of:  
4 a) coloring a first region of the surface with a third color that is substantially the same as  
5 the first color;  
6 b) coloring a second region of the surface adjacent said first region with a fourth color  
7 that is substantially the same as the second color; and  
8 c) providing a third region between said first region and said second region, said third  
9 region containing said third color and said fourth color combined to form a color  
10 gradient such that there is a gradual transition from said third color in said first region  
11 to said fourth color in said second region.
- 1 2. A method of camouflaging an exterior surface of a structure not intended for human  
2 occupancy, the structure located between a vantage point and a background, wherein a  
3 foreground extends away from the structure in a direction opposite the background, the  
4 method comprising the steps of:  
5 a) providing the exterior surface of a structure intended for human occupancy with at  
6 least one reflector having a reflective surface; and  
7 b) positioning said at least one reflector such that said reflective surface reflects light  
8 from a portion of the foreground to the vantage point.
- 1 3. A method according to claim 2, wherein at least a portion of said reflector is a semi-  
2 diffuse reflector.
- 1 4. A method according to claim 2, wherein said foreground has a generally uniform  
2 composition comprising characteristic wavelengths of visible light, the method further

3 comprising the step of filtering from light incident said reflector at least one wavelength  
4 of visible light different from said characteristic wavelengths.

1 5. A method according to claim 4, wherein said at least one wavelength is in the orange-red  
2 portion of the visible light spectrum.

1 6. A method of camouflaging an exterior surface of a structure located between a vantage  
2 point and a generally uniform background, wherein a foreground extends away from the  
3 structure in a direction opposite the background, the method comprising the steps of:  
4 a) providing the exterior surface with at least one reflector having a reflective surface;  
5 b) filtering from light incident said at least one reflector at least one wavelength of  
6 visible light; and  
7 c) positioning said at least one reflector such that said reflective surface reflects at least a  
8 portion of the filtered light to the vantage point.

1 7. A method according to claim 6, wherein at least a portion of said reflector is a semi-  
2 diffuse reflector.

1 8. A method according to claim 6, wherein said foreground has a generally uniform  
2 composition comprising characteristic wavelengths of visible light and step b) includes  
3 filtering from the light incident said reflector at least one wavelength of visible light  
4 different from said characteristic wavelengths.

1 9. A method according to claim 6, wherein said at least one wavelength is in the orange-red  
2 portion of the visible light spectrum.

1 10. A method of camouflaging an exterior surface of a structure located between a vantage  
2 point and a background, wherein a foreground extends away from the structure in a  
3 direction opposite the background, the method comprising the steps of:

- 4       a) providing the exterior surface with at least one semi-diffuse reflector having a
- 5           reflective surface; and
- 6       b) positioning said at least one semi-diffuse reflector such that said reflective surface
- 7           reflects light from a portion of the foreground to the vantage point.

1   11. A method according to claim 10, wherein at least a portion of said reflector is a semi-

2       diffuse reflector.

1   12. A method according to claim 10, wherein said foreground has a generally uniform

2       composition comprising characteristic wavelengths of visible light, the method further

3       comprising the step of filtering from light incident said reflector at least one wavelength

4       of visible light different from said characteristic wavelengths.

1   13. A method according to claim 12, wherein said at least one wavelength is in the orange-red

2       portion of the visible light spectrum.

1   14. A method of camouflaging an exterior surface of a structure located between a vantage

2       point and a generally uniform background, wherein a foreground extends away from the

3       structure in a direction opposite the background, comprising the steps of:

- 4       a) capturing at a first region light from at least one of the generally uniform background
- 5           and the foreground;
- 6       b) conducting said light to a second region located proximal to the non-specular exterior
- 7           surface and spaced from said first region; and
- 8       c) emitting said light at said second region, at least a portion of said light being directed
- 9           toward the vantage point without forming an image.

1   15. A method according to claim 14, wherein said foreground has a generally uniform

2       composition comprising characteristic wavelengths of visible light, the method further

3 comprising the step of filtering from light incident said reflector at least one wavelength  
4 of visible light different from said characteristic wavelengths.

1 16. A method according to claim 15, wherein said at least one wavelength is in the orange-red  
2 portion of the visible light spectrum

1 17. A camouflaged structure located between a background and a vantage point, the  
2 background containing, simultaneously or at different times, a first color and a second  
3 color, the method comprising:  
4 a) a member having a surface visible from the vantage point; and  
5 b) a pattern of colors applied to said surface, said pattern comprising:  
6 i) a first region containing a third color substantially the same as the first color;  
7 ii) a second region containing a fourth color substantially the same as the second  
8 color; and  
9 iii) a third region containing said third color and said fourth color combined to form a  
10 color gradient such that there is a gradual transition from said third color in said  
11 first region to said fourth color in said second region.

1 18. A camouflaged structure according to claim 17, wherein the camouflaged structure is a  
2 support tower.

1 19. A camouflaged structure according to claim 17, wherein the camouflaged structure is a  
2 chimney.

1 20. A camouflaged structure according to claim 17, wherein the camouflaged structure is a  
2 cooling tower.

1 21. A camouflaged structure not intended for human occupancy, the camouflaged structure  
2 located between a generally uniform background and a foreground containing visible  
3 light and a vantage point, comprising:  
4 a) a member having an exterior surface; and  
5 b) a reflector having a reflective surface, said reflector attached to the structure and  
6 located adjacent said exterior surface and between said exterior surface and said  
7 vantage point, said reflective surface positioned so that at least a portion of the visible  
8 light contained in the foreground is reflected to the vantage point.

1 22. A camouflaged structure according to claim 21, wherein said reflector is a non-directional  
2 reflector.

1 23. A camouflaged structure according to claim 21, wherein said reflective surface has an  
2 area of less than 25 in<sup>2</sup>.

1 24. A camouflaged structure according to claim 21, wherein the camouflaged structure is a  
2 support tower.

1 25. A camouflaged structure according to claim 21, wherein the camouflaged structure is a  
2 chimney.

1 26. A camouflaged structure according to claim 21, wherein the camouflaged structure is a  
2 cooling tower.

1 27. A camouflaged structure located between a generally uniform background and a  
2 foreground containing visible light and a vantage point, comprising:  
3 a) a member having an exterior surface; and  
4 b) a semi-diffuse reflector having a reflective surface comprising a plurality of light  
5 diffusing elements, said semi-diffuse reflector attached to the structure and located

6 adjacent said exterior surface and between said exterior surface and said vantage  
7 point, said reflective surface positioned such that at least a portion of the visible light  
8 contained in the foreground is reflected to the vantage point.

1 28. A camouflaged structure according to claim 27, wherein the foreground has a generally  
2 uniform composition comprising characteristic wavelengths of visible light, the  
3 camouflaged structure further comprising a filter located between the vantage point and  
4 said reflective surface, said filter for filtering at least one wavelength of visible light that  
5 is different from the characteristic wavelengths of visible light.

1 29. A camouflaged structure according to claim 27, wherein the filter comprises a transparent  
2 layer adjacent said reflective surface, said transparent layer including at least one dye for  
3 absorbing said at least one wavelength of visible light.

1 30. A camouflaged structures according to claim 29, wherein said at least one dye absorbs a  
2 wavelength in the orange-red portion of the visible light spectrum.

1 31. A camouflaged structure according to claim 27, wherein the camouflaged structure is a  
2 support tower.

1 32. A camouflaged structure according to claim 27, wherein the camouflaged structure is a  
2 chimney.

1 33. A camouflaged structure according to claim 27, wherein the camouflaged structure is a  
2 cooling tower.

1 34. A camouflaged structure located between a generally uniform background and a  
2 foreground containing visible light and a vantage point and having a generally uniform  
3 composition comprising characteristic wavelengths of visible light, comprising:

- 4       a) a member having an exterior surface;
- 5       b) a reflector having a reflective surface, said reflector attached to the structure and
- 6           located between said member and said vantage point, said reflective surface
- 7           positioned so that at least a portion of the visible light contained in the foreground is
- 8           reflected to the vantage point; and
- 9       c) a filter located between the vantage point and said reflective surface, said filter for
- 10           filtering at least one wavelength of visible light that is different from the characteristic
- 11           wavelengths of visible light.

1   35. A camouflaged structure according to claim 34, wherein said filter is a transparent layer  
2       confronting said reflective surface, said transparent containing a dye for absorbing said at  
3       least one wavelength of visible light.

1   36. A camouflaged structure according to claim 35, wherein said dye absorb at least one  
2       wavelength on the red-orange portion of the visible light spectrum.

1   37. A camouflaged structure according to claim 34, wherein said reflector is a semi-diffuse  
2       reflector.

1   38. A camouflaged structure according to claim 34, wherein the camouflaged structure is a  
2       support tower.

1   39. A camouflaged structure according to claim 34, wherein the camouflaged structure is a  
2       chimney.

1   40. A camouflaged structure according to claim 34, wherein the camouflaged structure is a  
2       cooling tower.

1 41. A camouflaged structure located between a generally uniform background and a  
2 foreground containing visible light and a vantage point comprising:  
3 a) a member including an exterior surface having a camouflaged region; and  
4 b) a camouflaging member comprising:  
5 i) a light capturing feature spaced from said camouflaged region, said light capturing  
6 feature for capturing light from at least one of the generally uniform background  
7 and the foreground,  
8 ii) a light emitting feature located proximal to said camouflaged region, said light  
9 emitting features for emitting light captured by said light capturing feature toward  
10 the vantage point without forming an image, and  
11 iii) a light conductor extending between said light capturing feature and said light  
12 emitting feature, said light conductor for conducting light captured by said light  
13 capturing feature to said light emitting feature.

1 42. A camouflaged structure according to claim 41, wherein said light conductor comprises a  
2 solid, transparent material.

1 43. A camouflaged structure according to claim 42, wherein said light conductor includes a  
2 dye that absorbs at least one wavelength of visible light.

1 44. A camouflaged structure according to claim 41, wherein said light conductor comprises a  
2 center layer sandwiched between a first boundary layer and a second boundary layer, said  
3 center layer, first boundary layer and second boundary layer each having a refractive  
4 index, said refractive index of said center layer being greater than said refractive index of  
5 each of said boundary layers.

1 45. A camouflaged structure according to claim 41, wherein at least one of said light  
2 capturing feature and said light emitting feature is contained within said light conductor.



- 1 46. A camouflaged structure according to claim 45, wherein said at least one of said light  
2 capturing feature and said light emitting feature contained within said light conductor  
3 comprises a specular reflector.
- 1 47. A camouflaged structure according to claim 46, wherein said specular reflector is planar.
- 1 48. A camouflaged structure according to claim 46, wherein said specular reflector is non-  
2 planar.
- 1 49. A camouflaged structure according to claim 45, wherein said at least one of said light  
2 capturing feature and said light emitting feature contained within said light conductor  
3 comprises a refractive index gradient reflector.
- 1 50. A camouflaged structure according to claim 45, wherein said at least one of said light  
2 capturing feature and said light emitting feature contained within said light conductor  
3 comprises a specular reflector.
- 1 51. A camouflaged structure according to claim 45, wherein said light conductor has a  
2 refractive index and said at least one of said light capturing feature and said light emitting  
3 feature contained within said light conductor comprises a region having a refractive index  
4 lower than said refractive index of said light conductor.
- 1 52. A camouflaged structure according to claim 41, wherein said light conductor comprises a  
2 material having a refractive index and said light conductor includes a plurality of regions  
3 each having a refractive index different from said refractive index of said material.
- 1 53. A camouflaged structure according to claim 52, wherein each of said plurality of regions  
2 forms at least one refractive index gradient reflector.

1 54. A camouflaged structure according to claim 52, wherein each said plurality of regions  
2 comprises a microsphere.

1 55. A camouflaged structure according to claim 54, wherein each of said microspheres is  
2 defined by a gas bubble formed in said material.

1 56. A camouflaged structure according to claim 54, wherein each of said microspheres  
2 comprises a solid material suspended in said material of said light conductor.

1 57. A camouflaged structure according to claim 41, wherein said light conductor forms a  
2 sheet.

1 58. A camouflaged structure according to claim 41, wherein said light conductor forms an  
2 elongate member has a first surface and a second surface spaced from said first surface,  
3 said first surface being said light capturing feature and said second surface being said  
4 light emitting feature.

1 59. A camouflaged structure according to claim 58, wherein said light conductor forms a  
2 band.

1 60. A camouflaged structure according to claim 58, further comprising a third surface  
2 extending between said first and second surfaces, said third surface including a reflector.

1 61. A camouflaged structure according to claim 41, wherein said reflector is a specular  
2 reflector.

1 62. A camouflaged structure according to claim 41, wherein said reflector is a semi-diffuse  
2 reflector.

- 1 63. A camouflaged structure according to claim 58, wherein at least one of said first and  
2 second surfaces includes a plurality of light-diffusing surface features.
- 1 64. A camouflaged structure according to claim 58, wherein a plurality of said elongate  
2 members forms a laminate.
- 1 65. A camouflaged structure according to claim 64, wherein each of said second surfaces of  
2 said plurality of elongate members defines a plane, each of said planes being generally  
3 parallel to and spaced apart from one another.
- 1 66. A camouflaged structure according to claim 64, wherein said laminate forms a band.
- 1 67. A camouflaged structure according to claim 41, wherein at least one of said light  
2 capturing feature and said light emitting feature is formed by at least one protrusion on  
3 said light conductor.
- 1 68. A camouflaged structure according to claim 67, wherein said at least one protrusion has a  
2 triangular transverse cross-sectional shape.
- 1 69. A camouflaged structure according to claim 67, wherein said at least one protrusion has a  
2 first outwardly-facing surface having a first area and a second outwardly facing surface  
3 having a second area smaller than said first surface.
- 1 70. A camouflaged structure according to claim 41, wherein said light conductor has a  
2 surface at least a portion of which includes a reflector.
- 1 71. A camouflaged structure according to claim 70, wherein said reflector is specular.
- 1 72. A camouflaged structure according to claim 70, wherein said reflector is semi-diffuse.

1 73. A camouflaged structure according to claim 41, wherein the camouflaged structure is a  
2 support tower.

1 74. A camouflaged structure according to claim 41, wherein the camouflaged structure is a  
2 chimney.

1 75. A camouflaged structure according to claim 41, wherein the camouflaged structure is a  
2 cooling tower.

1 76. A camouflaged structure located between a background containing a first color and a  
2 second color simultaneously or at different times and a foreground containing visible light  
3 and a vantage point, the background, comprising:

4 a) a first member having a surface visible from the vantage point;

5 b) a pattern of colors applied to said surface, said pattern comprising:

6 i) a first region containing a third color substantially the same as the first color;

7 ii) a second region containing a fourth color substantially the same as the second  
8 color; and

9 iii) a third region containing said third color and said fourth color combined to form a  
10 color gradient such that there is a gradual transition from said third color in said  
11 first region to said fourth color in said second region.

12 c) a second member having a first exterior surface;

13 d) a reflector having a reflective surface, said reflector attached to the structure and  
14 located adjacent said first exterior surface and between said first exterior surface and  
15 said vantage point, said reflective surface positioned so that at least a portion of the  
16 visible light contained in the foreground is reflected to the vantage point.

17 e) a third member including a second exterior surface having a camouflaged region; and

18 f) a camouflaging member attached to the camouflaged structure, comprising:

- 19 i) a light capturing feature spaced from said camouflaged region, said light capturing  
20 feature for capturing light from at least one of the generally uniform background  
21 and the foreground,
- 22 ii) a light emitting feature located proximal to said camouflaged region, said light  
23 emitting features for emitting light captured by said light capturing feature toward  
24 the vantage point without forming an image, and
- 25 iii) a light conductor extending between said light capturing feature and said light  
26 emitting feature, said light conductor for conducting light captured by said light  
27 capturing feature to said light emitting feature.